

# TW5790



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## TW5790 Smart GNSS Antenna for Precise Positioning

### Overview

The TW5790 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver/antenna with Inertial Measurement Unit (Untethered Dead Reckoning) and integrated L-Band corrections receiver for stand alone RTK for Precise Point Positioning. The TW5790 is capable of providing sub 6 cm accuracy to support the most demanding navigation, automation and precision agriculture applications.

### Interference Resilience

The TW5790 incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ multi-band (L1/L2) dual feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands, offering high availability for RTK solutions with a quick convergence time. The multi-band (L1/L2) architecture is the most effective method for the removal of ionospheric error. The TW5790 employs multi-stage filtering with low noise figure LNAs, combined with the dual feed Accutenna™, which greatly improves the rejection of multi-path signal interference. The IMU Sensor Fusion further mitigates effects of severe multi-path reflections and provides continuous position availability during periods of GNSS outages caused by signal obstruction offering exceptional performance to meet the most challenging precise positioning applications.

### Corrections Applications

The TW5790 incorporates an L-Band correction receiver which offers sub 6 cm accuracy through real-time PPP-RTK corrections via the Point Perfect subscription service. (No RTK base station is required, typical of traditional RTK applications.) The L-Band receiver offers quick convergence and continuous corrections for North America and Europe for geographic regions without IP/Network coverage. Point Perfect streaming corrections are available in continental US, Canada, Europe, South Korea and Australia.

The TW5790 may also be configured to operate in an RTK mode as a rover offering sub cm precision.



### Features

- Integrated L-Band corrections receiver for exceptional precision
- Improved noise immunity with multi-band GNSS receiver
- Improved multi-path rejection with Dual feed Accutenna™
- Multi-band GNSS receiver is unaffected by ionospheric errors
- High reliability timing with expansive constellation array
- High position availability in urban environment with UDR
- 5V operation
- USB 2.0 signalling
- Industrial grade IP67 enclosure
- Rugged magnetic mount
- 5M cable lengths with USB Type A male
- L1/L5 option available

# TW5790 Smart GNSS Antenna

## Specifications

### Antenna

|                       |                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------|
| Architecture          | Multi-band (L1/L2), Dual Feed                                                                      |
| Axial Ratio           | L1: < 1 dB typical                                                                                 |
| Frequencies           | GPS L1C/A L2C, GLO L10F L20F,<br>GAL E1B/C E5b, BDS B1I B2I,<br>QZSS L1C/A L2C                     |
| SBAS L1 C/A           | WAAS, EGNOS, MSAS, GAGAN                                                                           |
| Channels              | 184-channel u-blox F9 engine                                                                       |
| Anti-jamming          | Active CW detection                                                                                |
| Corrections Receiver  | L-Band PPP-RTK (SSR)                                                                               |
| Signal Support        | GPS: L1 C/A, L2P, L2C, L5 3<br>GLONASS: L1 C/A, L2 C/A<br>Galileo 3: E1, E5A/B<br>Beidou: B1I, B2I |
| Corrections Data Rate | Continental: 2400 bps                                                                              |
| Coverage              | EU, US, AUS. KR                                                                                    |
| Format                | SPARTN, RTCM                                                                                       |

### Interface

|                  |                      |
|------------------|----------------------|
| Pwr, Gnd, DP, DM | USB 2.0, Type A Male |
|------------------|----------------------|

### Serial Protocol

|           |                       |
|-----------|-----------------------|
| Output    | NMEA 0183, UBX Binary |
| Baud Rate | Configurable          |

### Mechanical

|                 |                                     |
|-----------------|-------------------------------------|
| Dimensions      | .66.5 mm dia. x 21 mm H             |
| Weight          | .135 g                              |
| Mounting Method | Fixed Mount                         |
| Cable Length    | .5m with USB 2.0 Type A termination |

### Electrical

|          |                                                        |
|----------|--------------------------------------------------------|
| Voltages | .5 VDC                                                 |
| Current  | .1 Watts (nominal operating)<br>Measured @ 5VDC supply |

### Environmental

|                       |                                                            |
|-----------------------|------------------------------------------------------------|
| Operating Temperature | -40°C to +85°C                                             |
| Storage Temperature   | -40°C to +85°C                                             |
| Weatherproof          | IP67                                                       |
| Shock                 | Vertical axis 50G, other axis 30G<br>3 axis sweep – 15 min |
| Vibration             | 10-200 Hz log sweep 3G                                     |

### Sensitivity

|                |          |
|----------------|----------|
| Tracking & Nav | -166 dBm |
| Reacquisition  | -160 dBm |
| Hot starts     | -158 dBm |
| Cold starts    | -147 dBm |

### Acquisition

|               |         |
|---------------|---------|
| Cold start    | .25 sec |
| Aided start   | .3 sec  |
| Reacquisition | .2 sec  |

### Position

|                             |              |
|-----------------------------|--------------|
| Standard Horizontal PVT     | .1.5m CEP    |
| Standard Horizontal SBAS    | .1.0m CEP    |
| SPARTN Corrected Horizontal | .<0.06m CEP* |
| Convergence                 | .<45 sec     |

## Ordering Information:

33-5790-0

Please refer to the Ordering Guide for the current and complete list of available products.



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**About Tallysman:** With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at [www.tallysman.com](http://www.tallysman.com)

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